THE SCIENTIFIC AMERICAN.

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THE SCIENTIFIC AMERICAN,

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BY PORTER & MALLERY.

RUFUS PORTER,—Editor.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other *Scientific Improvements*,—American and Foreign Inventions; Catalogues of American Patents;—Scientific Essays, illustrative of the principles of the Sciences of Mechanics, Chemistry, and Architecture;—Instruction in various Arts and Trades;—curious Philosophical Experiments;—Miscellaneous Intelligence, Poetry, and, occasionally, Music.

This paper is especially entitled to the patronage of Mechanics and Manufacturers, being the only paper in America devoted to the interests of those classes; but is particularly useful to Farmers, as it will not only apprise them of improvements in agricultural implements, but iustruct them in various mechanical trades, and guard them against impositions. As a family newspaper, it will convey more useful intelligence to children and young people, than five times its cost in school instruction. Another important argument in favor of this paper, is, that it will be worth two dollars at the end of the year, when the volume is complete, and will probably command that price in cash, if we may judge from the circumstance that old volumes of the "New York Mechanic," by the same editor, will now command double the original cost.

TERMS.—"The Scientific American" will be furnished to subscribers at $2, per annum,—one dollar in advance, and the balance in six months.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

The Frog.

MACHINE POETRY.

Of all the things that live
In woodland, marsh, or bog,
That creep the ground or fly the air,
The funniest is the frog—
The frog—the scientifickest
Of Nature's handy work—
The frog, that neither walks nor runs,
But goes it with a jerk.

With pants and coat of bottle green,
And yellow fancy vest,
He plunges into mud and mire—
All in his Sunday best;
When he sits down he's standing up,
As Paddy O'Kinn once said;
And, for convenience sake, he wears,
His eye on top his head.

You see him sitting on a log,
Above the "nasty deep,"
You feel inclined to say, old chap
Just "look before you leap!"
You raise your cane to hit him,
His ugly-looking mug;
But, ere you get it half way up,
Adown he goes KER-CHUG.

He keeps about his native pond,
And ne'er goes on a spree,
Nor gets "how-come-you-so," for a
Cold water chap is he;
For EARTHLY cares to get drunk
He's not the silly fool;
But, when they come, he gives a jump,
And drowns 'em in the pool.

Yankee Land.

I wish I was in Yankee land,
And was a boy again,
I'd suck sweet cider till I burst,
And fish in every rain.

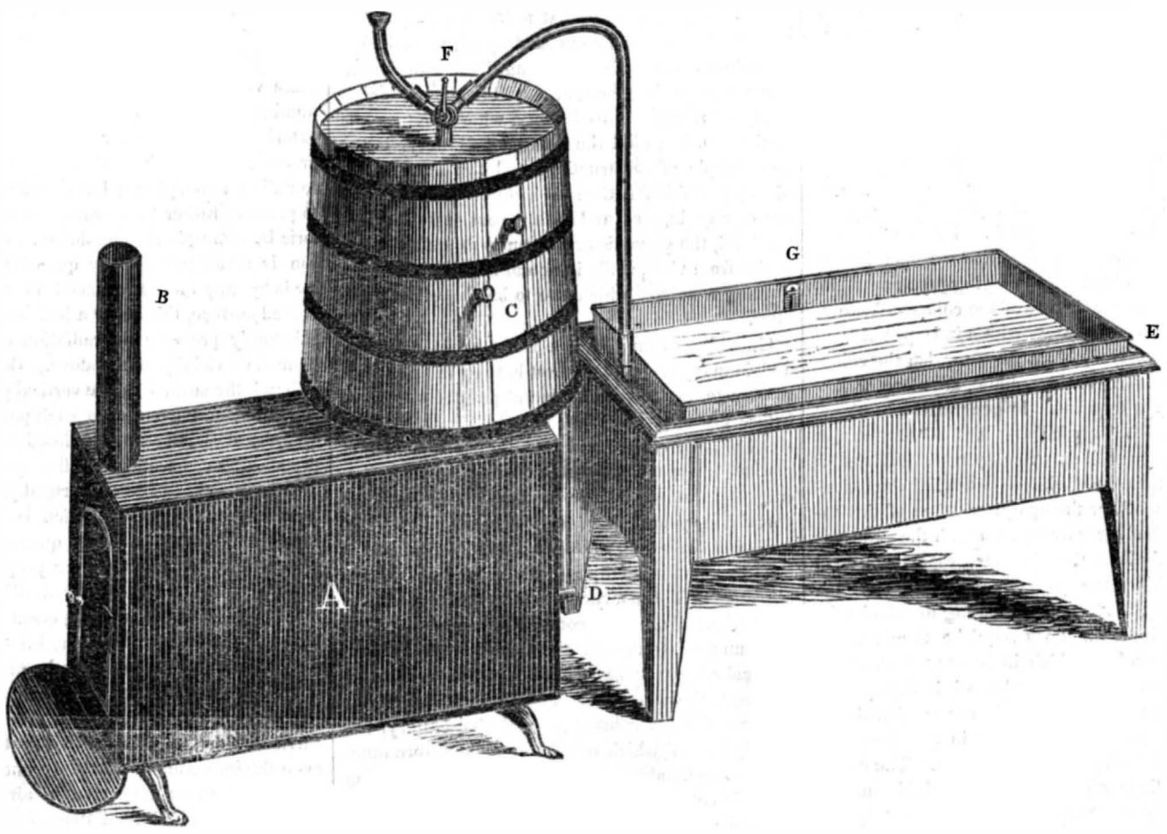
I'd never wander from my home
To visit foreign scenes,
But always to my mammy stick
And live on PORK AND BEANS!

Sonnet in Praise of Invention.

Great was the man who first invented letters;
Great was Archimedes, Galileo great—
Great was Copernicus; who from the fetters
Of ancient error freed the Starry State,
Great were the Ptolemies, great was Tycho Brahe,
Pythagoras, and Count Rumford, and Macadam,
Watts, Arkwright, Kepler, and the man whose pa
Was once the owner of the town of Haddam.
Great was Sir Humphrey Davy, Roger Bacon;
Great is Daguerre, and Richard Adams Locke,
Franklin, by whom the thunder's throne was shaken;
Great was the inventor of the wooden elock.

COMPOUND INTEREST.—If an English penny had been placed out at compound interest at five per cent, in the year one, it would, last Christmas, 1840, have produced the enormous sum of £4,047,055,811,126,677,845,110,793,317,430,411,529, which, laid down edgeways, would measure the immense length of 54,292,888,880,329,484,980,173,827,118,308 miles, and make 1,529,862,220 of our earth in solid gold. At simple interest it would have produced only 7s. 9d.

IMPROVED STEAM DIARY APPARATUS.



EXPLANATION.—An iron stove about two feet long, and eighteen inches high, contains within it a cylindrical boiler, and within the boiler, a cylindrical furnace, with a grate for the fire. This boiler is so arranged that the fire or heated air passes through its centre, and returns outside to the smoke pipe B, where it escapes. A generator C made of wood is placed a few inches above the stove, and has two or more try-cocks on its side, whereby the depth of the water therein is ascertained. The water within the boiler is contained between the two cylinders, and communicates with the water in the generator by the pipes, one of which extends from the top of the boiler to the bottom of the generator; and the other extends from the side, or from the bottom near the side of the generator, to the bottom of the boiler at D. By means of this arrangement,—the generator being about half filled with water, and a fire placed in the furnace,—a current of water constantly ascends from the boiler through the first pipe, and descends through the second; thus keeping the water in the generator at the same temperature with that in the boiler. A short distance from the stove is a water-vat E, built of wood, and standing on legs; and at the head of the generator is a valve head F with a roller valve or two way cock, so constructed that the steam cannot be wholly suppressed, nor escape in only one direction at the same time. From this valve head project two branch pipes, by one of which the steam escapes to the open air, and by the other, the steam is conducted to the bottom of the water-vat, and terminates within a casing of wood—a longitudinal piece of plank, the sides of which are perforated for the purpose of distributing the steam equally in the different parts of the vat. Another vat—the *milk-vat*—made of tin plate, and of dimensions nearly equal to the interior of the water-vat, is set therein, and is intended to contain the milk in preparation for cheese. By this arrangement the space between the two vats being nearly filled with water, the milk may be gradually and uniformly warmed, by admission of steam into the water-vat. A thermometer, G, is suspended at the side of the milk vat, the bulb being immersed therein, and accutately indicates the temperature of the milk during the process. This apparatus will also be found very convenient for readily and economically heating owater, for various purposes in which hot water is required in farming establishments. It was invented by Mr. Gordon, Farmer, of Mohawk, Herkimer Co., N. Y., who has taken measures for securing a patent, and will furnish the machines, or rights therein, on the most reasonable terms.

DEVILTRY.—A great many queer stories are told of the facts and the necromantic tricks of the Herr Alexander, who is now putting all former magicians in the shade. One was related to us by a lady which struck us as being more wonderful than any we had before read of. The performer desired a number of gentlemen of the audience to loan him their handkerchiefs, and proceeded to collect some dozen or fourteen of them, which he plunged into a bowl of clear water, standing in full view of the company. Many of the handkerchiefs were not exactly suited for exhibition to a fastidious assembly, as two at least of the owners of the same used snuff, but this did not appear to trouble the magician at all; he put them in the water together and stirred them around with the air of one determined to make them white as snow. He then took them from the water and held them up to view with the fluid streaming from them,—a mass of wet rags.—He then proceeded to ram and jam them, wet as they were, in the mouth of a blunderbuss, which being done he fired off the piece over the heads of the audience. To the minds of many present it seemed that the washed handkerchiefs were now done gone, blown away forever—but not so, for an instant afterwards the Herr opened a box which stood near him and took from it *all the handkerchiefs* perfectly clean, nicely ironed, neatly folded, and *scented with lavender!* Every man had his bit of cambric returned to him, and every man, snuff takers included, enjoyed the fragrance of his cleansed and odoriferous "wipe." How blest must that woman be who rejoices in the Herr as her spouse, how happy the small family with the mighty magician for an inmate!

A CHEERFUL WIFE.—A good writer has remarked that a woman may be of great assistance to her husband by wearing a cheerful smile continually upon her countenance. A man's perplexities and gloominess are increased a hundred fold, when his better half moves about with a continued scowl upon her brow. A pleasant, cheerful wife is as a rainbow set in the sky, when her husband's mind is tossed with storms and tempests; but a dissatisfied and fretful wife, in the hour of trouble, is like one of those fiends who are appointed to torment him.

PROFESSIONAL CANDOUR.—A staid and demure-looking quaker lady called on our neighbor, Dr. Christie, a few days since. "Will the Galvanic Rings cure depression of spirits?" asked the lady. "What has caused the complaint, madam?" replied the doctor. "the loss of my husband," mournfully ejaculated the lady. "Then you had better get a *wedding* ring," said the doctor. Exit the lady to do the same.

VIRGINIA MILL, RICHMOND.—The Gallego mill was built in 1833. It is situated at the head of the basin of the Jamor river canal. Its dimensions are 95 feet by 84 feet; its total height being 105 feet. It is eight stories high in the rear, four stories high in the front, and three stories in the attic. The building is of brick, and built in the most substantial manner; the walls of the first story being 5 1-2 feet thick. The gearing and shafts throughout are of iron, the whole machinery being put in motion by three water wheels, of 32 feet in diameter each, and 12 feet bucket, carrying 24 pairs of burrs, 4 of which are used for rubbing in cleaning the wheat. The business done by this mill is very large; it ordinarily turns out about 500 barrels of flour in the twenty four hours; though, when required, it has turned out 700 barrels in that time. The flour is packed in barrels, in the usual way, by hand, and pressed in the barrel by machinery. Attached to, and communicating wth, this mill, is a lumber house, measuring 81 feet by 80, three stories in front, four stories in rear, and two stories in the attic; its total height being 70 feet; and, adjoining this lumber house, there is another now in course of erection, measuring 65 feet by 50 feet, four stories high in front, five stories in the rear, and two in the attic; its height is 70 feet. The flour ground at this mill is chiefly sold for the South American markets, where it is in great request, and enjoys a deservedly high reputation.

A NEW BAROMETER.—It is difficult for all persons to have a Barometer to ascertain the state of the weather, but in England they have made a discovery of a very simple character. It is by keeping a *Leech* in a phial of water. If the weather continues serene and beautiful, the leech lies motionless at the bottom of the glass, and rolled together in a spiral form. If it rains either before or afternoon, it is found to have crept up to the top of its lodgings, and there it remains till the weather is settled. If we are to have wind, the poor prisoner moves through its limpid habitation with amazing swiftness, and seldom rests till it begins to blow hard. If a remarkable storm of thunder and rain is to succeed, for some days before, it lodges continually out of water, and discovers great uneasiness in violent throes and convulsive like motions. In frost, as in summer-like weather, it is constantly at the bottom. And in snow, as in rainy weather, it pitches its dwelling upon the very mouth of the phial. It may not be amiss to note that the leech is kept in a common eight-ounce glass phial, about three-fourths filled with water, tied on the mouth with a piece of linen rag. In the summer time, the water is changed once a week, and in winter once a fortnight.

A CHEAP BREAKFAST.—A son of Erin, at Schenectady, heard the breakfast bell ring on board of a canal boat as starting out for Buffalo. The fragrance of the viands induced him to go aboard.

"Sure, Captain, dear," said he, "an, what'll ye ax a poor man for thravelling on your illigant swan ov a boat?"

"Only a cent and a half a mile, and found," replied the Captain.

"An' is it the vittles ye mean to find, sure?"

"Yes. And if you're going along come down to breakfast."

Pat didn't wait to be told a second time, but having descended into the cabin and made a hearty meal he came again on deck and requested that the boat might be stopped.

"How far have we come, just?" asked Pat.

"Only a little over a mile."

Pat thereupon handed the Captain two cents, and coolly told him that he believed he would not go any further with him, as Juddy would wait her breakfast, not knowing that he had breakfast out.

The joke was so good that the Captain took the cents, ordered the boat stopped, helped Pat ashore, and told him that should he ever have occasion to travel that way again he should be most happy to carry him.

TO GET A TIGHT RING OFF A FINGER.—Thread a needle flat in the eye with a strong thread; pass the end of the needle with care under the ring, and pull through a few inches towards the hand; wrap the long end of the thread tightly around the finger, regularly, all down to the nail, to reduce its size. Then lay hold of the short end of the thread, and unwind it. The thread pressing against the ring will gradually remove it from the finger. This never failing method will remove the tightest ring without difficulty, however much swoolen the finger may be.

THE THOUSANDS OF ISRAEL.—According to the Faithful Watchman of Zion—the organ of the orthodox German Jews—there are in Italy, 50,000 Israelites; in Holland and Belgium, 80,000; in England, 30,000; in Denmark and Sweden, 5,000; in Russia, 60,000; in Poland, 1,500,000; in Hungary, 160,000; in European Turkey, 300,000; and in other parts of Europe about one million.

MOUNTAINS OF NORTH AMERICA.—The highest peaks of the Rocky Mountains are Brown and Hooker Mountains. They reach up three miles above the level of the ocean. The Black Mountains in North Carolina, and the White Mountains in New Hampshtre, are one mile and a quarter high. No other point of the great Apalachian range is above a mile in height.

CATALOGUE OF AMERICAN PATENTS ISSUED IN 1844.

(Continued from No. 11.)

CLASS XV.—*Stone and Clay Manufactures, including Machines for Pottery, Glass-making, Brick-making, dressing and preparing Stone, Cements, and other building materials.*

Moulding brick, John Booth and Wm. H. Stevenson, Columbus, Miss.—Jan. 6.

Moulding brick, Wm. T. Peters, executor of Ithiel Town, New Haven, Ct.—Sept. 27.

Brick press, Mark Twitchell, Gray, Me., June 10; Jeffrey Smedley, Columbia, Pa., Aug. 28; C. B Baker and E. Gifford, Troy, N. Y., Sept. 7th; Nathan Sawyer, Baltimore, Md., Sept. 27; Benjamin H. Brown, Philadelphia, Oct. 3.

Dressing Mill-stones, John Black, Helena, Ark., Aug. 10.

Stone-cutters, Jacob Jenks, Roscoe, Ill., June 2.

Dressing Stone, Hammond Ward, Charlton, Mass. April 10.

CLASS XVI.—*Leather, including Tanning and Dressing, Manufacture of Boots, Shoes, Saddlery, Harness, etc.*

Cork-sole Boots, William L. McCauley, Baltimore, Md., June 5.

Boot-crimps, Josiah M. Read, assignee of Abraham Thayer, assignee of Josiah Copeland, Boston, Jan. 20: Pelatiah Stevens, jr., Canton, Mass., July 15.

Boot-shank, Isaiah Gale, Natchez, Miss., July 11.

Crimps for Collar pad, Joseph S. Barkdull, Ballston, N.Y, July 13.

Harness check-hooks, Abel B. Buell, Westmoreland, N.Y., March 13.

Horse-hames, Nathan Post, Madrid, N. Y., June 15: Joseph K. Slater and Sylvester G. Pratt, Boston, Sept. 20.

Machinery for forming hats of leather, Randal Fish, New York, Oct. 12.

Machine for cutting raw hides, William Marshall and J. B. Thursby, Brooklyn, N.Y.: Sept. 4.

Making Leather, Robert Downey, New Albany, In.: June 15.

Splitting Leather, Alpha Richardson, Boston: April 17.

Construction of Saddles, Samuel Ringgold, Fort McHenry, Md.: Oct. 7.

Sewing machine, James Rogers, New York: July 22.

Cutting Soles, Richard Richards, Lynn, Mass.: December 16.

Tanning, John Cox, Georgie Mills, Edinburgh, Scotland: June 5; Adam Kettering and A. Vogle, Hempfield, Pa.: June 24; William Brown, Manchester, Md.: August 1.

CLASS XVII.—*Household furniture, machines and implements for domestic purposes, including washing machines, bread and cracker machines, feather dressing, etc.*

Bedstead, Wm. F. Converse, R. H. Penny, and R. S. Hanniford, Harrison, Ohio: December 31.

Bureau bedstead, Henry W. Kingman, New York: October 12.

Sacking bottoms of bedsteads, Isaac Cooper, Johnstown, Pa.: October 7.

Sofa bedstead, G. L F. Griswold, assignee of G. Sickels, Middletown, Ct.: December 4.

Bread knife, Franklin Roys, Berlin, Ct.: Oct. 9.

Machine for making brooms, Jacob H. Hinton, Lancaster, Pa.: March 13.

Scrubbing-brushes, George Carver, Chambersburg, Pa: August 1.

Trimming the bristles of brushes, Samuel Taylor, East Cambridge, Mass.: May 17.

Rocking-chair, A. C. Stiles, South Bloomfield, Ohio: September 27.

Coffee pots, Daniel Rowland, Washington, D.C.: September 17.

Cracker machine, W. H. Tuttle, assignee of J. Johnson and Otis Freeman, Boston: May 17.

Cutting sausage meat: William Pittenger, Rome Ohio: March 26; Edwin Clark, Hartford: Aug. 31.

Machines for producing exercise, Oliver Halstead, New York: March 13.

Fruit and vegetable preservers, Peter Kephart, Uniontown, Md.: September 24.

Refrigerator, D. Evans, Philadelphia: March 25,

Washing machine, James B. Coffin, Big Prairie, Ohio: February 2; Ephraim Lukens, Baltimore; March 9; Lewis Woodward, Medford, N.J.: April 4; William Newbrough, Wooster, Ohio: April 17; William Soule, Stafford, Ct.: May 17: Oliver B. Wight, Sturbridge, Mass.: July 9; William E Arnold, Rochester: July; David Kaufman, Mohecanville, Ohio: August 21; Nathan Parish, Rush, N. Y.: December 4.

To be continued.

AMERICAN RAILROAD IRON.—The Mountour Iron Company's mills, at Danville, turn out beautiful specimens of T rail, made entirely of Anthracite pig iron. The Pottsville Gazette says "The rails exhibited to us are 18 feet in length, and weight fifty-one pounds to the yard; we have never seen any English rails surpassing them in beauty of make and finish, and it is believed that the material itself is superior to that generally employed in England for similar purposes. These rails are made for the Lancaster Road, and several tons we understand are already completed. The Montour Company will be able to turn out at least 10,000 tons per year."

CINCINNATI.—The commerce of Cincinnati is already immense. In the article of groceries alone, the following have been the imports since January last: Coffee, 44,351 sacks; sugar, 11,285 hhds.; molasses, 19,263 bbls; pepper, 1,235 bags; raisins, 12,410 boxes; rice, 2,053 tierces. In grain, &c., we have the following returns: Wheat, 115,115 bushels; oats, 112,243 do; barley, 28,426 do; corn, 159,203 do; flour, 118,306 bbls.; whiskey, 121,243 do; cheese, 65, 481 boxes and 905 casks, and 134,000 packages of merchandise.

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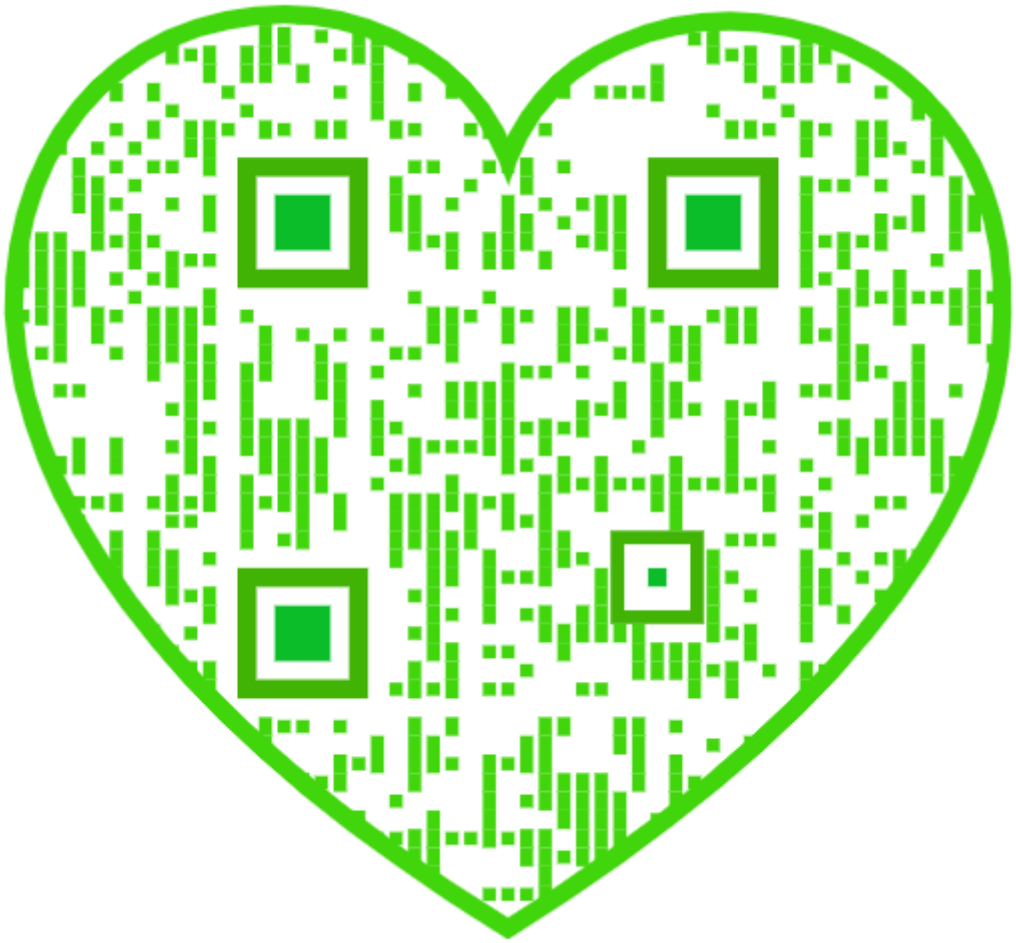
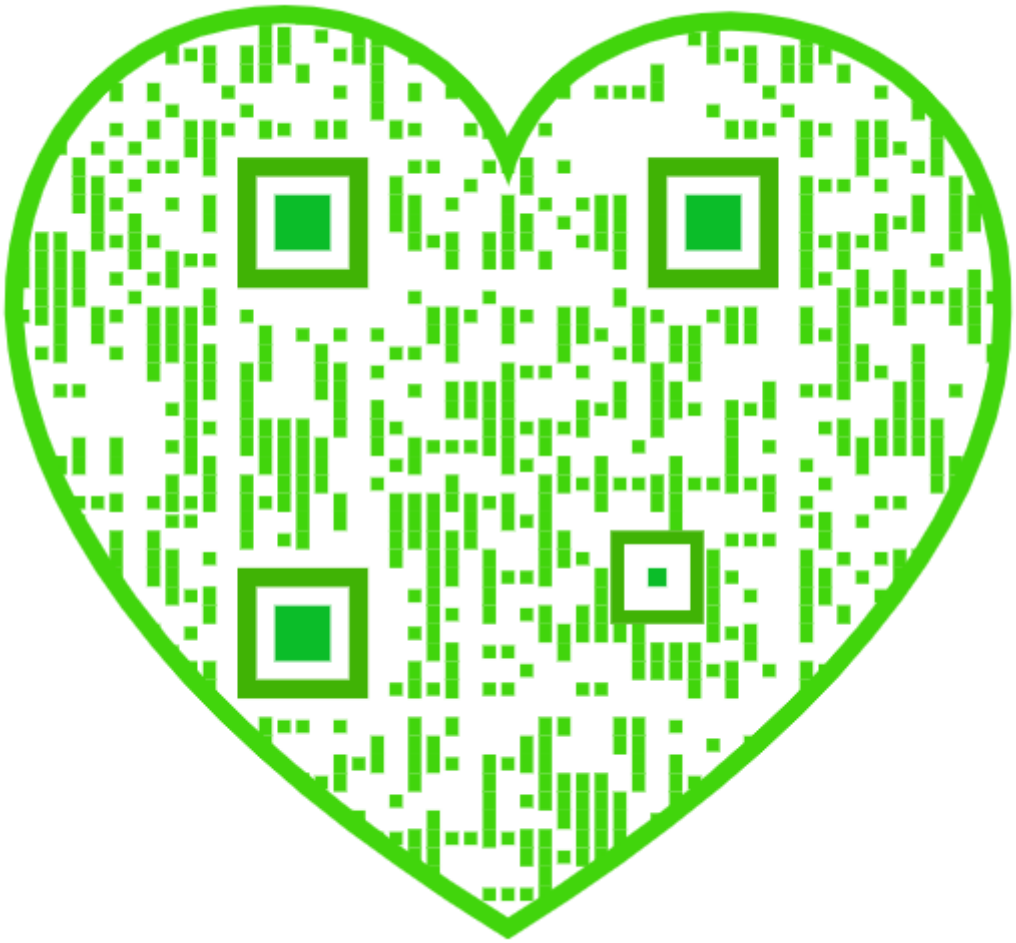


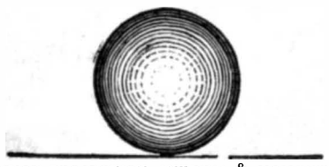


SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, DECEMBER 4.

Science of Mechanics.

(Continued from No. 11.)



MOTION PROJECTION, INERTIA & MOMENTUM.—We have in former numbers, had frequent occasion to speak of motion, but without defining or fully explaining it. There are several kinds of motion, which are designated by the terms Rectilinear, Curvilinear, Circular, Rotary, Excentric, Spiral, Vibratory Undulatory, Compound and Crooked. Rectilinear motion, has a straight forward course, whether continuous or vibratory. Curvelinear motion describes the arc of a circle, and if continued, it becomes a circular motion. Rotary motion is also, circular, in a limited sense; but in this, the moving body is supposed to revolve on its own axis. Excentric motion, is rotary in its principle, but varies from a regular circle;—The moving body being carried farther from its axis in one part of its revolution than in another. Spiral motion is also rotary, but the moving body in its revolutions, progresses more or less in the direction of the centre of its axis; thus each part af the moving body, conforms to the direction of a thread of a screw. Vibratory motion may partake of either the rectilinear or curvilinear motion, but is alternate in opposite horrizontal directions. Undulatory motion is similar to the vibratory, only that its directions are vertical.—Compound motion consists of two or more of the other motions combined; and crooked or irregular motion is supposed to be governed by no specified laws, and of course its track is never perfectly repeated. The opposite of motion is rest; and a state of motion appears to be quite as natural for all bodies, as a state of rest. The same force is required to produce rest, in a moving body, as to produce motion in one at rest. A body once in motion, will as naturally continue in motion to the end of time, as one at rest will continue at rest.

Quantity of power is usually designated by the *vertical distance* which a given weight may be raised in a given time; or the *weight* that may be raised a given distance in a given time: or, the *time* in which a given weight may be raised a given vertical distance; thus, in either case, the quantity of power is designated by the counteraction of the force of gravity. A much better mode, however, of designating *quantity of power*, is by the amount of inertia that may be overcome, or, the velocity with which a given weight in a given time may be put in motion. Thus, to give 100lb weight a velocity of 64 feet per second is equal to raising 100lb a vertical distance of 64 feet in an equal time.

A force of 7 lb. being applied to a weight of 7 lb., and the application of the force being continued through a space of 4 feet, the weight will have acquired a velocity of 16 feet per second. If 28 lbs. of pressure or force be applied to 7 lbs. weight, through a space of 1 foot; or 1 lb. pressure through 28 feet space, the volocity of the weight will be the same.

If four times the power be applied to an equal weight through an equal space: or if an equal power be applied through four times the space, the velocity of the weight will be double. Thus:

Force.	Weight.	Space.	Velocity.
7	7	4	16
28	7	1	16
1	7	28	16
7	7	16	32
112	7	1	32
14	14	16	32
224	14	1	32

It requires 8 times as much power to give 14lbs., (the weight of a column of water 1 inch square and 32 feet long) a velocity of 32 feet per second; as to give 7 lb., (the weight of 16 feet of water,) a velocity of 16 feet per second. And as the momentum of a body in motion, is the same as the power applied in producing its motion, it follows that 32 feet of water with a velocity of 32 feet per second, will require 8 times as great a resistance to stop it, as is required to stop the motion of 16 feet, with a velocity of 16 feet per second. A force of 14 lb. being applied to a weight of 14 lb. and the force continued one second of time, will produce a velocity of 32 feet per second. Whence it is inferred, that a resistance of 14 lb. continued one second of time, will overcome the momentum of the said weight. If 7 lb. force be applied to 7 lb. weight, and the pressure continued half a second; or if 3 1-2 lb. force be applied to 7 lb. weight, and the pressure continued one second, a velocity of 8 feet per second will be produced. It will therefore require a resistance of 7 lb. continued half a second: or 3 1-2 lb. continued one second to stop its motion. Thus it appears that the resistance requisite to overcome the momentum of a column of water with a velocity of 8 feet per second, is *four* times as great as that required to resist a velocity of 8 feet per second. A force or pressure of 10lb. being applied horizontally to a ball whose weight is 10lb. and this force continued one second of time, the ball will have passed over a space of 16 feet, and will have acquired a velocity of 32 feet per second. If double this force is applied, during one second of time, the velocity of the ball will have been doubled, and the space passed over will have been doubled also. If double the force is applied to an equal extent of distance, the velocity will not be doubled, although the momentum will be doubled, and a double resistance would be required to stop the motion of the ball; but if the force is exerted during an equal *time*, the velocity will be doubled, and a *quadruple* resistance will be required to overcome the momentum and stop the motion. (To be continued.)

The art of Painting.

(Continued from No. 11.)

TRANSPARENT PAINTING ON CAMBRIC.—This art is extensively practised, in painting screens and window shades. The cambric or muslin is prepared by being stretched on a frame of convenient size, being secured by tacks at the edges, and sized with a mixture of fine flour paste, white glue, and white bar soap, in the proportion of one pound of flour to four ounces of glue and five ounces of soap. The soap must be of the white or transparent kind, and serves to soften the other ingredients and render the cloth pliable and elastic. The flour is first made into paste, and while hot, the soap is added, with a few drops of essence of cinnamon, lemon, or lavender, to prevent unpleasant perfumes. The glue is to be dissolved by itself, and then the whole is mixed together, and diluted with water till it will work freely with a common paint brush, while cold. A thin sizing is spread on the work side of the cambric: and if the sizing is well proportioned and applied, it will be nearly invisible when dry. A coat of pure linseed oil, diluted with an equal quantity of spirits of turpentine, may be applied to the whole surface, or only such parts of it as is intended to receive the coloring; it must be applied quickly and uniformly, that the transparency may be equal in all parts; and if a little copal varnish be mixed with the oil, it will be the better. The frame, with the cambric, must be placed between the artist and the principal light, that the lights and shades may be seen distinctly during the process of painting. The colors used in this branch, generally consist of Ivory Black, Prussian Blue, Ultramarine, Paris Green, Crystals of Verdigris, Gamboge or Turmeric, Lake, Umber, and Burnt Umber, Terradesienna and Burnt Terradesienna, and Gum-asphaltum or Brunswick Blacking. (The Turmeric is prepared by steeping it in alcohol, and straining off the liquor, which may be then mixed with oil or varnish. These colors are ground in oil, diluted with spirits of turpentine, to which may be added a little drying japan or white vitriol, to hasten the drying of the colors. An outline of the design is drawn with a hair pencil with dilute umber or ivory black; after which the colors are applied, more or less dilute, as more or less transparency is required. In general, the brightest colors should be applied first, and afterward the darker shades or colors. The operator will find it requisite to turn the work-side to the light occasionally, to see whether the opaque surface of the coloring and shading corresponds with the transparent view; for it is the peculiar property of good work of this kind, to appear equally well in an transparent or opaque view. In regulating the shades for the purpose, it is sometimes requisite to mix white lead with the colors, which increases the shade in the transparency, while it reduces it in the opaque. Stencils, in sets made to match, are used with advantage in this branch, especially in the formation of borders and scroll embellishments. The colors must be applied with soft brushes and laid smoothly; and if any part receives too dark a coloring, the only remedy is to scrape off the paint from such parts before it is dry. The best design for window shades, consist of landscape views, and should be always designed to accommodate the form and position of the ground on which they are drawn. With regard to the rules of coloring and shading landscape views. we must refer the reader to our next number. (To be continued.)

EXPENSES OF WAR.—From 1793 to 1815—a period of 22 years,—England, France, and Austria expended $7,330,000,000 in war. The interest of this sum, at 6 per cent., would be sufficient to build 50 miles of good railroad per day at a cost of $25,000 per mile.

The expenditures of the United States in wars and preparation for war, from 1789 to 1843, was $932,755,000. The interest on this sum would give a constant support to 1,000,000 of inhabitants—give a liberal education to all the children in the United States: or, if applied to the cultivation of the public lands, would supply all the inhabitants of the United States with provisions. So much for war.

BRITISH RAILROAD TO OREGON.—The London Colonial Gazette says:—"The great inter-colonial line of railway to connect Halifax with Quebec, is designed to complete the long chain of communication from the Atlantic on the northwestern side o the continent of British North America, encircling the lakes of Canada, and piercing the far west, till it reaches the Oregon territory on the shores of the Pacific. It is the grand project of a great age. Add to it the electric telegraph, and the transmission of thought from one ocean to the other. Of the value and importance of the colonies of British North America to the parent state, too high an estimate can scarcely be formed.

FANCY COSTUMES.—The peculiar costume of Georgia, is said to consist of a shirt collar and a pair of spurs:—that of Mexico, a blue ribbon and a string of beads:—Southern Indians,—a small piece of rope round their waist. Sandwich Islands,—an ostrich feather. Texas,—a straw hat and a pocket-handkerchief. South Carolina,—a segar and pair of spectacles. Anti-mormons,—a quill behind the ear and two brickbats. Wolverenes,—a fur cap and bottle of anti-ague drops.

EFFECTS OF HEAT.—Cast iron expands by 200 degrees of heat 1-278 of its bulk. Brass expands 1-177. Mercury 1-45. Water 1-23. Oils 1-e2. Alcshol 1-9. Cast iron melts at 2786 degrees of heat. Copper melts at 1996; silver at 1873; brass at 1672; lead at 612; tin at 442; wax at 142; water boils at 212; water freezes at 32; Mercury, solid, at 40 degrees below zero.

A GENERAL TREAT.—One item in the "General Orders," on the occasion of the surrender of Cornwallis, was that "a gill of rum should be issued for every soldier, in evidence of the Governor's hearty congratulation with them on the occasion."

ADVANTAGE OF ADVERTISING.—A lady in Providence, R. I, having ordered an advertisement of "money lost," in one of the papers, returned home and found it in the drawers of her work-table.

Galvanism.

(Continued from No. 10.)

BATTERIES.—The most general mode of connecting the several pairs in a compound battery, is by means of simple copper wires, about 1-12 inch in diameter. Each cup is provided with a small brass post, which is soldered to the rim of the cup, and projects upward an inch or more, terminating in a screw, to which a nut is fitted: and a crease being cut in the side of the screw, one end of the wire is placed in the crease, so that when the nut is run down on the screw it binds the wire to the post, as shewn in the cut at the head of this article. A more simple and compact battery, consists of a series of plain pieces of copper and zinc plates, placed in cells prepared for them, in a box made of wood, about one foot long, six inches wide and five deep. These cells are formed by partitions of wood and leather alternately extending lengthwise, or from end to end of the box. The interior of the box, and all the wood partitions, are thoroughly coated with a varnish consisting of asphaltum and beeswax melted together and diluted with spirits of turpentine. The plates are then placed alternately in the several cells, and by the sides of the wood partitions, so as to be at as great a distance as possible from the leather, and connected by wires as before described. The cells then being filled with the saline solutions described in No. 11, the battery is ready for action. This battery, which, by way of distinction, is called the Compact Battery, is the most simple of construction, and the most conveniently portable for itinerant lecturers, or practitioners, of any in use; and being constructed with a trunk lid, the galvanic arrangement is entirely concealed from view, while in actual operation and performing wonders, which are to be described hereafter.

GROVE'S BATTERY.—This is the most powerful, and in many respects the best battery in use. It is constructed on the same general principles as those before described, but with this difference, that instead of plain copper and zinc, the plates consist of platina, and zinc amalgamated or coated with mercury:—instead of leather, a partition of unglazed porcelain is placed between the metallic plates; and iastead of the saline solutions, fuming nitric acid is used in one apartment, and dilute sulphuric acid in the other. These articles are arranged in glass cups or tumblers, and connected consecutively in the manner described for the other plates. This is the kind of battery that is nsed in producing the electro-magnetic action in Morse's Telegraph, and for the ignition of Colt's submarine explosive battery, full descriptions of which will be given in future numbers. One hundred pairs, on this principle, being properly connected, will communicate the magnetic power through a continuous copper wire two or three hundred miles in length. We may give a more minute description of these batteries, with graphic illustrations, hereafter.

To be continued.

The following may be read upwards of a thousand different ways, by beginning at the letter S in the centre.

n a c i r e m A c i f i f i c A m e r i c a n
a c i r e m A c i f i t i f i c A m e r i c a
c i r e m A c i f i t n t i f i c A m e r i c
i r e m A c i f i t n e n t i f i c A m e r i
r e m A c i f i t n e c i e n t i f i c A m e r
e m A c i f i t n e i c i e n t i f i c A m e
m A c i f i t n c i c S c i e n t i f i c A m
e m A c i f i t n e i c i e n t i f i c A m e
r e m A c i f i t n e i e n t i f i c A m e r
i r e m A c i f i t n e n t i f i c A m e r i
c i r e m A c i f i t n t i f i c A m e r i c
n c i r e m A c i f i t i f i c A m e r i c a
n a c i r e m A c i f i f i c A m e r i c a n

IMPROVEMENT ON THE MERIMACK.—A new and wealthy company, called the Essex Company, has been recently formed in Massachussetts, and is constructing a dam and canal on the Merimack, near Andover Bridge, for the purpose of manufacturing operations, on a scale equal to that of the Lowell companies. The stock in this concern, already commands 25 per cent advance in the market; and in consequence of the operations of this company, the stock in the old Andover bridge, has advanced from $80 to $200 per share. The value of property for many miles round, has been enhanced by this movement, thus adding fresh proof to the axiom, that the surest method of increasing the wealth of a community, is by introducing and encouraging improvements in industrial facilities.

SCANDALOUS.—Rev. Mr. Fairchild, who was not long since tried, and to the minds of many, proved guilty of an aggravated case of seduction, but is supposed to have escaped conviction in consequence of his clerical dignity, and of having more money than his victim or her friends, has been recently installed as a pastor of a church in South Boston. We are informed that a majority of the Boston clergymen disapproved of the installation.

SOUTHERN SUPERIORITY.—That the people of the southern sections of the Union are incomparably superior in point of tact and firmness, to those of the northern, appears in *bold relief* in the fact, that the interests and influence of less than 90,000 slaveholding voters, preponderates in Congress, in the formation of most of the laws of the U. S., against more than 600,000 of voters who are opposed to slavery.

NARROW ESCAPE.—We lately saw, from our office window, a large and contented looking dog, lying across a part of the street, with his head near the curbstone, and demurely gnawing a bone, when a carriage wheel passed nearly in contact with his posterior, and if he had had a tail it would surely have been cut off: but luckily the dog had no tail and consequently did not even wink nor turn his head when the wheel passed.

Economy in Fuel.

Few subjects of improvement have received more attention for the last twenty years than this, and it is with many people a matter of astonishment, that as late as within fifty years, and in the most enlightened parts of this country, chimneys have been erected with fire places in which more than twelve times the fuel was required to be consumed in order to warm the room, that is now required for the same, or an equal purpose, in a modern approved stove. Still there are those who appear to understand little of the true principles of economy in this respect; and some even in this city, continue the use of fire places or chimney grates, from the fires in which, two thirds of the radient heat escapes up the chimney to warm the atmosphere without, while half of the remaining third part radiates into the bricks of which the chimney is composed. And in some instances, even where a stove is used, the pipe or funnel is made as short as possible, so that the heat escapes by the shortest possible course from the fire to the chimney. But we are glad to find many who understand the thing better, having looked into the theory of it; but yet there is one essential point which appears to have been in a great measure overlooked, even by those who are supposed to have given the most attention to the subject; that is, the facilitating the radiation of heat by an atmospheric current, or a free circulation of air in the immediate vicinity of the stove. We do not mean by this circulation, to facilitate the combustion of the fuel, but to carry off the heat rapidly from the surface of the stove as fast as it radiates through the iron. We have seen some varieties of stoves, constructed with a great number of flanches or leaves, projecting from the exterior of the stove, for the ostensible purpose of presenting as much surface as possible to the surrounding atmosphere; but the effect of this plan is to prevent, rather than promote a free escape of caloric by atmospheric circulation. Of this the reason is obvious; for if any quantity of atmospheric air is by any means confined in contact with the heated surface, this being a bad conductor of heat, effectually prevents the radiation of heat from the immediate vicinity of the stove. But if, on the other hand, the surface of the vertical part of the stove is smooth and even, then each particle, or minute quantity of air, as soon, as it imbibes the least quantity of caloric, becomes rarified, and rising by its own buoyancy, passes off vertically, thus producing a current of rarified air which is thus circulated through the room; and the quantity of heat thus circulated, is in some measure proportionate to the velocity of this current. For an illustrative experiment on this subject, let any person select a spot on the surface of a stove that is red-hot, and blow with a common hand bellows directly on that spot for a few minutes: the result will be, that the excess of the atmospheric current thus produced will have carried off the caloric from *that* spot so rapidly, that even the iron will have lost its redness, and become brown. Not that the current of air has in the least degree prevented the radiation of heat through the side of the stove, but, on the contrary, has promoted it; but has at the same time removed it so suddenly from the surface, that a part of even that which had constituted the redness of the iron, has gone with it, and thus prepared the way for a more rapid radiation of the heat emanating from the burning fuel. Now, therefore, we would recommend that in the construction of stoves, regard may be had to facilitating a free circulation or current of air over the exterior heated surface.

OPPOSITION TO MANUFACTORIES.—A young wealthy planter, from South Carolina, who had entertained an inveterate aversion to the cotton manufactories of the north, recently resorted to a personal opposition to the success of the Lowell factories, by selecting from one of the mills, one of the best and most beautiful operatives, and by the aid of a clergyman, took measures to prevent her ever returning to the mill, to aid in the odious business of manufacturing. Should all the young southerners combine and follow this example, it would go farther to embarrass the speculating cotton manufacturers than all the vehement declamations of the turbulent orators of the Carolinas.

FLORIDA.—The emigration into Florida this season, is said to be unprecedented. The interior of the country is fast filling up with enterprising settlers, who prefer buying their ice ready made, to attending the process of its manufacture.

TO CORRESPONDENTS.—The communication of D. T., of Auburn, is received, for which he has our thanks, although the length of the article will prevent its insertion for the present.

A. H. G., of Unionsville, has furnished the most simple and perfect demonstration of the *parallelogram within a trapezium*, that we have seen. We may give it an insertion hereafter in connection with other problems.

S. W., of B., is informed that we have first rate facilities for furnishing drawings or engravings of new inventions, at this office, at the lowest prices

FREE PAPERS.—Inventors and others nonsubscribers to whom we may send copies of this paper, are respectfully solicited to become subscribers, aed to introduce the paper to others, where it may have a chance to tell its own story.

Post Masters who receive copies, are requested to display them, and dispose of them to any persons who will pay the postage thereon.

ILLUSTRATIONS OF CHEMISTRY.—Our readers will readily perceive the difficulty, not to say the impossibility of our accommodating a greater variety of subjects at the same time, than at present. The series on chemistry is in fact suspended for a little while, to make room for the series on Galvanism, preparatory to the illustration of the principle and operation of the Magnetic Telegraph, and instruction in the arts of electro-plating, silvering and moulding.

BACK NUMBERS.—As the demand for back numbers from the commencement, is extensive and increasing, we shall re-print them in a few days, and supply all who may order them in due season.

VARIETY

Bernadotte, King of Sweden, speaking of his own warlike disposition and appearance, once remarked that whenever he looked in the glass he was *afraid of himself.*

Pliny relates that one of the Roman armies encountered and killed a serpent 120 feet in length. The hydrargos, now exhibiting in Boston, being of the same length, is supposed to be a twin brother to it.

The King of Prussia, at his own expense, has caused the printing of 17,000 copies of the Scriptures for distribution among the schools of the realm.

The Lowell Manufacturing Company have decided to erect a new mill, 320 feet long, 200 wide and five stories high, for the manufacture of Brussels and Ingrain carpets.

Lord Mansfield once remarked that he had encountered fraudulent debtors; but that where he had encountered one fraudulent debtor, he had met nine hundred fraudulent creditors.

It is reported that a mechanic in Ohio has discovered a method of making church bells of steel, which are very sonorous and much cheaper than common bells.

The keeper of the Portland observatory counted 265 vessels at anchor at one time in the harbor of Portland, a few days since, besides those at the wharves.

The Mount Savage Iron Company are about erecting an additional rolling mill, and nearly a hundred new dwellings for the accommodation of workmen.

Some unlucky thief having stolen a quantity of uncollected bills from a Boston newspaper concern, it is proposed, as a punishment, to *compel him to collect them.*

From fifty to sixty thousand pounds of lead mineral, worth $22 per thousand, have been raised by eight miners in Illinois, in one day. A profitable business.

Upward of 1,000,000 tons of coal, from the Schuylkill regions, have been shipped during the past season, and preparations are making for a much larger business in future.

There are about 4000 United States troops, at Corpus Christi, Texas, with nothing to do but enjoy the fine sunny climate and play with the gentle alligators.

Another splendid steamer, 230 feet long, and called the *Brother Jonathan*, is to be finished this winter, to run between Boston and Portland next season.

The Zanesville Republican says that great speculations are going on in Texas Scrip, the buyers supposing that Uncle Sam will redeem it all,—when he gets ready.

"I would give half my fortune," said a wealthy man the other day, "could I perspire as that laborer does." "Labor as I do," was the reply, "and you will."

The Oregon River derived its name from *oregano*, the Spanish name of pennyroyal, which grows abundantly on its banks. The Territory has five organised counties and a population of 4,000.

A Western editor recently announced his intention of 'running for sheriff:' to which a jolly Irishman replied, 'and 'tis yourself has a perfect right to do it; for the sheriff has often run for you.'

The 'Dismal Swamp' is again on fire in the vicinity of Deep Creek, and the immense clouds of smoke obscure the southern horizon, and render the atmosphere difficult of respiration.

Boston is making the experiment of paving the streets with granite blocks. We have no doubt of complete success if the blocks are diagonally arranged.

There is said to be a brisk demand for machinists and other mechanics, at Fayetteville, N.C. Cabinet and chair makers are particularly wanted.

Leti boasted that for twenty successive years, he had had a new book published, and a child born to him, annually. A productive *author.*

An Irish gentleman, the other day, in excess of connubial affection, exclaimed, "Heaven forbid, my dear, that I should ever live to see you a widow!"

The appropriation to the British Navy for the current year is $33,620,200. That government has no expectation of universal peace immediately.

A country editor says, "on our *outside* will be found a TORN COAT, and other articles." Many a country editor is found with a torn coat on his outside.

Milwaukie, in Wisconsin Territory, contains 8,000 inhabitants;—a population suddenly jumbled together from all nations—except a few.

The Camanche Indians, are called the Arabs of America. They are continually roving in parties on horseback, and plunder all that comes in their way.

One hundred and ten sermons were lately preached in London, the same Sabbath, on the subject of Peace.

The Chinese have the art of dwarfing trees, and will cultivate a pear or apple tree, perfect in all its parts and yet not exceeding a foot in height.

A new Iron Company are making preparations for the manufacture of railroad iron, in the State of Maine, where they have a mine of excellent ore.

In the city of St. Louis there are forty run of stones, capable of grinding five thousand seven hundred bushels of wheat per day.

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Written for the Scientific American.

Aerial Navigator.

I see thee, in thy power, yet I cannot reason why,
Possessing no vitality, thou 'rt soaring in the sky,
What is it gives thy force to thee? what guides thee in thy way?
Canst thou at will return to earth, then rise and soar away?

I would I were thy master, thou my obedient slave,
I'd soar away in ether—I'd cross the darkening wave,
I'd view old Rome, now languishing, I'd visit Carthage's site,
And bathe my brow with glory, in soft Venitian light.

Yet linger long I would not, but hasten on my way,
And trace the Nile up to its source beneath the torrid ray,
Oft pausing in my journey, to greet a passing one,
And mark the various traits of mind, that on their features shone.

O'er Jubal Kumra's lofty heights, my course I'd then direct,
Of half discovered Africa, the knowledge I'd perfect,
Descending oft to mingle with the sable tribes that roam,
'Mid boundless forests deep and dark, the Ethiop lion's home.

But these should not detain me long, and northward still afar, [star
My rapid course should onward be, till 'neath the polar
I paused above the icebergs, where the needle downward turned, (learned.
And the cause of its attraction, at the northern axis

Isour globe a surface only,'neath which fires eternal play?
Could I with thee, my servant, through the centre make my way; [flight I'd take,
And emerge in southern regions, thence my homeward
While the Aerial Navigator pride in every heart should wake.

ELDA.

The Mechanic's Saturday Night.

Now wife and children, let's be gay;
My work is done, and here's the pay—
'Twas hard to earn, but never mind it;
Hope rear'd the sheaf, and peace shall bind it.

Six days I've toil'd and now we meet
To share the welcome weekly treat,
Of toast and tea, of rest and joy,
Which, gained by labor, cannot cloy.

Come ye, who form my dear fireside—
My care, my comfort, and my pride;
Come now, let us close the night,
In harmless talk, and fond delight.

To-morrow's dawn brings blessings, peace,
And each domestic joys increase
To him who honestly maintains
That course of life which He ordains.

For this and every blessing given,
Thankful, we'll bow the knee to heaven;
In God's own house, our voices raise,
With grateful notes of prayer and praise.

Sweet's that tranquillity of heart,
Which public worship does impart;
And sweet's the field, and sweet's the road,
To him whose conscience bears no load.

Thus shall the day, as God designed,
Promote my health, improve my mind;
On Monday morning, free from pain,
Cheerful I'll go to work again.

Our life is but a lengthened week,
Through which we toil, for rest we seek;
And he whose labor well is past,
A joyful Sabbath finds at last.

The Earth is Beautiful.

The whole broad earth is beautiful
To minds attuned aright,
And wheresoe'er my feet are turned,
A smile has met my sight.

The city with its bustling walk,
Its splendor, wealth, and power,
A ramble by the river side,
A passing summer flower.

The meadows green, the ocean swell,
The forest waving free,
Are gifts of God, and speak in tones
Of kindliness to me.

And oh, where'er my lot is cast,
Where'er my footsteps roam,
If those I love are near to me,
That spot is still my home.

A FRENCHMAN'S BOARDERS.—A play actor, applied for boarding at a house kept by a Frenchman, who having learned that the applicant was a play actor, replied as follows:

'Den, ma foi, you cannot have de room. Two play actur have come board vis me two, five, seven veek—den dey valk out, and be gar dea come back nevaire. My wife say never mind, de acteur mans leave tree big trunk vich vill pay for de board; so we open de boxes, and de one have in him two pasteboard cap full of big stone—de oder two, begar was *full of nosing*.

THE WANT OF STREETS.—A friend of ours, who was recently in this city, complains of the difficulty of migration from one place to another, in the lower part of the city, for want of streets. We can assure him, however, that there *are* streets in almost every direction, though they have been for some months past, so deeply buried with rubbish and mud, that it is rather difficult to find them. We understand it to be the intention of our street commissioners, to have them all dug out next spring.

JOINING THE CHURCH.—William Bloomfield, an old bacheler, got married, in Iowa, to a pretty young girl named Eliza Church. Since his marriage he has known more happiness, he says, than he ever did before—all of which he attributes to having joined *the Church*.

New Inventions.

A NEW RAILROAD.—A patent has been obtained in England for a new atmospheric railway, on which the cars are to be driven by a blast of wind blown through an iron pipe:—the pipe containing a piston connected with one of the cars. This pipe being placed centrally between the rails, and extending the length of the road, has a crevice at the top to admit of the passage of the plate which connects the car to the piston, and this crevice is closed with some elastic substance, which is parted by the plate in its passage, and closes immediately after it. A stationary engine is to be employed in working a bellows at the ends of the road, to produce the requisite blast through the pipe. The proprietors offer to ensure the lives of all who travel on the road, without extra charge.

NEW METHOD OF WATERPROOFING.—A Mr. Rogers has introduced an important invention for rendering cotton duck for sails and tents, impervious to water, mildew, or rot; and for rendering all kinds of woollen cloths, water proof. The inventor is in Washington for the purpose of effecting contracts with the Government, for supplying the army and navy with the use of the improvement.

GROUNDSELS' PREMIUM DRILL.—This is not the drill recently alluded to, for drilling militia companies; but is calculated for drilling and sowing a farmer's field, in a style far superior to what can be done by the usual method of sowing and harrowing. This drill can be so regulated as to sow any given quantity of seed to the acre, and buries it at an uniform depth in the earth. Mr. Groundsel, the inventor, has disposed of several of these machines in Maryland, where they readily gain the approbation of the farmers who use them.

A NEW AIR GUN.—We have seen several notices of a genteel cane, invented in Philadelphia, and constructed on the air-gun principle, in a manner to be discharged twenty times in quick succession, and throwing a ball with the accuracy of a rifle. But we have seen no description of any novelty in its construction, different from what has been in use twenty years or more: nor do we think that the subject is one which should be encouraged.

NEW MODE OF STEREOTYPING.—A method has been introduced of producing moulds for stereotypes, by soaking a piece of stout fine card-board till it becomes soft and pliable, and placing it on the form of moveable type and beating it down with a hard brush till the letters are thoroughly indented. It is then dried in that position by a gentle heat: and afterward, being removed and placed between two planished metallic plates, the melted metal is poured into the cavity formed by the types, and the new plate is then formed with a great degree of perfection and ready for use. It is said that one card-board will give several impressions, and that the whole process requires only about one hour.

SUGAR MAKING APPARATUS.—There is a report, said to be from a private letter, that a gentleman in Washington has invented a steam apparatus, by means of which the juice of the cane, particularly that prepared for the manufacture of the Muscovado sugar, may be readily purified by a separation of the fecula from the sacharine matter, prior to the process of crystallization: and the liquor being thus clarified, is said to be reduced to a white and excellent sugar in a few minutes time. This invention may be said to be "important if true," but we deem it very possible that the *story* is a "new invention" by the editor of the paper in which it first appeared.

NEW TYPE-SETTING MACHINE.—There is a report that a machine for setting type has been put in successful operation in *Vienna*. There has been reports of such an invention at various times and places before; but the inventions have usually been located at a great distance: and in this instance, if a man should go to Vienna to see this wonderful piece of mechanism, he would probably learn that it was at New York.

MORSE'S CEROGRAPHIC MAPS.—Harper & Brothers, are publishing a series of maps, in a style surpassing in elegance and accuracy any thing of the kind in use. They are issued in numbers, each number containing four maps, beautifully colored, and enclosed in elegantly embellished covers. These maps are superior to those which are ordinarily sold for 25 cents each; yet the whole number, containing four maps, is afforded for 25 cents.—only six cents each. Every family should be supplied with the full series.

EXCELLENT BLACK INK.—There are thousands in this city who can appreciate the difference between a good, free and dense black ink, and the worse than worthless decoction which is most generally sold by ordinary stationers; and will thank us for informing them that Mr. Thaddeus Davids, 112 John st., manufactures the article of superior quality, and which has been for several years used in the offices of the several departments of government, at Washington.

IMPROVED BRIDGES.—Two excellent improvements in bridges have been recently invented—one by Mr. G.W. Thayer, and the other by Mr. Lyman A. Gough, both of Springfield, Mass. Drawings and descriptions of both improvements may be seen at this office, by those who are interested or curious on that subject. We shall probably procure and present engravings of one or both in a few days.

INTEMPERANCE.—Of 873 persons who have been imprisoned in the Cincinnati jail, within the past year, no less than 790 were of intemperate habits. Why *will* the State Governments permit this curse to go at large. By the imprisonment of 790 distillers and dealers, seven times 790 *more honest* men, would be from prison saved.

GREAT BAGGING.—A Detroit paper gives a statement concerning a family by the name of *Bagg*, the members of which have received an aggregate amount of $16,791 during the present year, from the public purse. They are probably among the *mail-Bags*.

Favors of the Press.

Since the commencement of the publication of this paper, nearly one hundred of our generous co-temporaries have drawn deeply on our gratitude by liberal notices: and although most of the evidences of these favors, and especially the most complimentary of these notices which had come into our possession, have been destroyed by fire, we have yet enough left to remind us of our obligations to the generous American press: and by way of acknowledgment of these favors, we shall insert a few copies or extracts from those which have been received since the occurrence of the fire, which deprived us of the first class.

SCIENTIFIC AMERICAN.—This is a paper just commenced by Mr. Rufus Porter, and we enroll its name upon our exchange list with pleasure. Its objects and aims may be inferred from its title. Mechanics will find it a valuable and interesting weekly. Although it will doubtless contain much *Porter*, yet its participants may rest assured, that it will be entirely free from all tincture and taste of alcohol.

(Cataract, Worcester, Mass.

SCIENTIFIC AMERICAN.—We have received the 8th No. of the 1st Vol. of a paper under the above title. It is "the advocate of industry and enterprise, and journal of mechanical and other improvements." It is a neatly executed and very interesting paper, embellished with various drawings explanatory of important inventions. To that useful class of our people, the mechanics, it will be highly beneficial. Such a paper has been much needed in this country, and we hope and trust it will meet with a liberal patronage.—(Cleveland Times.

THE SCIENTIFIC AMERICAN.—This is the title of a new paper commenced in New York, devoted to scientific and mechanical subjects, and the advocacy of industry and enterprise. It is particularly worthy of the patronage of the farmer and mechanic, as it gives weekly four or five engravings of the latest improvements in mechanism and agriculture, accompanied with full descriptions of the same. It is also an excellent family paper, and will be found to possess interest for all the members of a family.—(Schuylerville Herald.

"Scientific American," published weekly in New York, Boston, and Philadelphia, by Rufus Porter. This paper especially commends itself to Mechanics and Manufacturers, as it not only contains general notices of mechanical and scientific improvements, but it also furnishes several illustrative engravings.—(Washington Journal, Portland.

The "Scientific American," published weekly by Rufus Porter, New York, is received and lays upon our table. As its title purports, it is devoted to scientific subjects, comprising industry and enterprise, mechanical and other improvements. It is conducted with great ability, and is one of the most useful sheets for mechanics in the United States. Our mechanics wishing an eastern paper, could not do better than to subscribe for the Scientific American.

(Germantown Gazette.

SCIENTIFIC AMERICAN.—We have received the first and sixth numbers of a new paper recently started in New York city by Rufus Porter, favorably known as once Editor of the New York Mechanic. The paper before us is not dissimilar in its objects from the "Mechanic:" and the long and thorough experience of the Editor is a sufficient guarantee that it will equal, if it does not excel, that reputable Journal. The "Scientific American" is "the advocate of industry and enterprise, and journal of mechanical and other improvements." Every mechanic—every scientific man, every manufacturer, artist, philosopher and tradesman in America should take this paper.—(Wisconsin Republican.

"The Scientific American," is the title of a useful weekly newspaper, published in New York. It is useful to mechanics and manufacturers especially, being devoted to Scientific essays, illustrative of the principles of their various pursuits, accompanied with engravings of new inventions. To mechanics it proves a most useful paper; and we are glad to see that politics, literature, agriculture, and other professions are not to monopolise our weekly papers, but that the mechanical branch of industry is to have its principles sent abroad in such a manner as to be within the reach of all mechanics.—(Bloomingdale Herald.

The Scientific American, is the name of a weekly paper published at New York, by Rufus Porter. It has reached its 9th No. Mr. Porter was several years since editor and publisher of the New York Mechanic, a paper which was very popular, and obtained an extensive circulation. The Scientific American professes to be "the advocate of industry and enterprise and journal of mechanical and other improvements." Each number is furnished with two or more engravings. The Editor has a better knowledge of machinery, and a more extensive acquaintance with patents, than any man within our knowledge.—(Wreath and Garland.

The Scientific American is a weekly sheet, not quite as large as our own, but ably conducted. It contains, in addition to the most interesting news of passing events, general notices of the progress of mechanical and other scientific improvements; American and foreign improvements and inventions; catalogues of American Patents; scientific essays, illustrative of the principles of the science of mechanics, chemistry, and architecture; useful information and instruction in various arts and trades; curious philosophical experiments; miscellaneous intelligence, music and poetry. The seventh number is before us, and if it be a specimen, it is well worthy of patronage.—(True Wesleyan.

THE SCIENTIFIC AMERICAN.—We think it an excellent paper, and its subscribers here think so, too—and we hav'n't a doubt that a good many more would be of the same opinion, if they received it.

(Democratic Pharos.

The Williamsburgh Gazette fitly says, in copying our account of the fire of last Monday evening:—"Among the sufferers by this conflagration is Rufus Porter, the worthy editor and proprietor of the Scientific American, one of the best papers for the use of mechanics which has ever been published in this country. Mr. P. was not insured, and saved nothing except his mail-book. Type, materials, &c. were all destroyed. We hope that our operatives will now step forward and subscribe for the Scientific American, which is to be continued, and thus, at least, aid their unfortunate brother. Independent of the satisfaction of doing good, the paper itself will richly reward them for this act."—(N. Y. Tribune.

THE SCIENTIFIC AMERICAN.—This excellent paper makes its appearance again after an absence of several weeks. It will be recollected that the office where this paper was published, was destroyed at the late fire in Spruce street, New York. The flames spread so rapidly that nothing was saved from the office but the mail books. No insurance. But the enterprising publisher is on his legs again, and we hope he may have more than additional patronage to make up his loss. We believe this is the only journal in this country exclusively devoted to mechanics and manufactures, and as Mr. Porter is himself a scientific mechanic, he cannot fail to interest those of these two classes who are interested in the mechanic arts. We consider the Scientific American worth preserving, and have placed it on file.—(Washington Journal.

The publication of the "Scientific American" is again resumed. A friend left the last number with us for perusal, and we do not hesitate to pronounce it an almost invaluable companion for the artisan, the mechanic, and all who feel an interest in the advancement of science. It is fully worth the price of subscription.—(Carbon Co. Gazette.

The Scientific American, it will be recollected, was burnt out a few weeks since, has again made its appearance, looking as smart as ever, and every way as interesting. This paper is devoted principally to mechanics and mechanic arts. It is a good paper and should be liberally supported. It is edited and published by Rufus Porter, 128 Fulton st. New York.—(Essex Banner.

On another occasion the following remarks appeared in the Banner:

In appearance, pith and interest, the Scientific American so forcibly reminded us of that smart and ably conducted journal, the Mechanic, formerly conducted by the present editor of the Scientific American, that we wrote Mechanic, instead of American on our exchange list.

To be continued.

Scraps of Curious Information.

The atmospheric pressure on the surface of the earth is near 15lb per square inch.—The weight or pressure of water, is about seven ounces per square inch for every foot of its depth.—845 cubic feet of atmospheric air, are as heavy as one *cubic foot* of water.—The bones of birds are hollow, and filled with air instead of marrow.—The flea jumps 200 times its own length, equal to a quarter of a mile for a man.—The Romans lay on couches at their dining tables on their left arms, eating with their right.—The walls of Nineveh were 100 feet high, and thick enough for three chariots abreast.—Babylon was 60 miles within the walls, which were 76 feet thick and 300 feet high.—The earth is 7,916 miles in diameter, and 24,880 miles round.—Forests of standing trees have been discovered in Yorkshire, England, and Ireland, imbedded in stone.—A man is taller in the morning by half an inch than he is at night.—The atoms composing a man are supposed to be changed every forty days, and the bones in a few months.—Fossil remains on the Ohio proves that it was once covered by the sea.—When the sea is of a blue color, it is deep water; when green shallow.—Book keeping, by double entry and decimal arithmetic, was invented in 1501.—Pocket watches were first introduced into England, from Germany, in 1501.—The color of the mourning dress amongst the Chinese and Siamese, is white; with the Turks blue and violet; Ethiopians gray; Peruvians mouse color; Japanese white; Persians brown, and Egyptians yellow.—The human body can be brought to endure a heat of 280 degrees of Fahrenheit. The experiment was tried successfully in Switzerland.—In the year 1510 a shower of stones fell at Pauda, Italy. One of these stones weighed 120 pounds.

A box 24 inches by 16 inches square, and 22 inches deep, will contain a barrel, or 10,752 cubic inches.—A box 16 inches by 16 8-10 inches deep, will contain a bushel, or 2,150, 4-10 inches.—A box 12 by 11 2-10 inches square and 8 inches deep, will contain a half a bushel, or 1,075 cubic inches.—A box 8 inches by 8 4-10 inches square and 8 inches deep, will contain 1 peck, or 237 8-10 cubic inches.—A box 8 by 8 inches square, and 4 2-10 inches deep, will contain one half peck or 268 8-10 cubic inches.—A box 4 inches by 4 inches square, and 4 2-10 inches deep, will contain one quart, or 67 2-10 cubic inches.

Interesting Experiments.

Place a pane of glass in a horizontal position, and spread over it a few drops of a saturated solution of alum: as the solution dries, it will rapidly chrystalize in small octohedrons, scarcely visible to the eye. When this glass is held up between the observer and the sun, or a candle, with the eye very near to the smooth side of the glass, there will be seen three beautiful haloes of light, at different distances from the luminous body. The innermost hale appears nearly white, while the larger or most distant, will appear brilliantly coloured, in consequence of the refraction of the light, by a more inclined set of the faces of the crystals.

TO PREPARE A PHIAL THAT WILL GIVE LIGHT IN THE DARK.—Fill a small phial about one third full of olive oil; add to this a piece of phosphorus equal to one tenth of the weight of the oil. Cork the phial and wrap it in the paper to exclude the light, and set it, or suspend it in a warm place, but where the heat may not be equal to that of boiling water, till the phosphorous appears to be dissolved. This phial may be carried in the pocket, and whenever the cork is started in the night, the phial will evolve light enough to show the hour on a watch.

YOU'LL BE TOO LATE.—The following sober and rational advertisement appears in the Cleveland (O.) Times. We would caution our Eastern bachelor readers against anticipation of successful application, as there is a hundred to one that the chance will be taken up by some Western wight, before an Eastern *aye, aye*, could reach the fair adtertiser, even by Morse's telegraph.

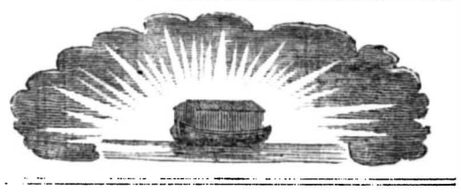
A HUSBAND WANTED.—A lady not yet turned of forty, well informed in all the duties of housewifery, of good form, and withal good looking, full of vivacity, and possessing a kind disposition, without much wealth, but willing to work—would accept an offer of marriage from a gentleman of suitable age, of good temper, kind-hearted, and of industrious and temperate habits. For further particulars, inquire personally of the editor of the Times.

DIVORCES IN CONNECTICUT.—The law of Connecticut requires the court to grant divorces, where either husband or wife are intemperate. Of course when a married couple wish to separate, they have only to procure a keg of rum, and they can soon become duly qualified for a full release from hymen's bonds.

☞ THE R. W. MECHANICS' MUTUAL PROTECTION, No. 11, meet every Wednesday evening at their Hall, corner of Bleecker street and Cottage Place, at half past seven o'clock, P. M.

D.L. BENSON, R. S.

There are in New York city 208 hacks, 250 cabs, and 239 omnibuses: total, 697.



Rational Religion.

We have written under this head before, and perhaps may do it many times more. The blessed Saviour once asked the bigoted pharisees and their adherents "Why judge ye not of your ownselves, what is right?" Which was evidently an appeal to that power of *reason*, which every man who is *honest* at heart, is capable of exercising. Christianity is ever opposed to a blind superstitious faith, but always encourages the reasoning faculties; the true faith being based on RATIONAL conclusions. It is a wonder and mystery, that even in this favored and enlightened country, where the Scriptures of truth, with abundant evidence of their authenticity, and divine origin, are placed in the hands or within the reach of every man, woman, and child, the most prevalent and favorite customs, are in many respects directly opposed to the principles, therein palpably and conspicuously inculcated. And these errors, so far from being restricted to the ostensibly ignorant, are not only indulged, but in many instances encouraged, by the most prominent and popular churches; while the mass of professed Christians blindly follow the blind leaders, without ever searching the Scriptures for themselves to "see if those things are so," or whether the leaders and churches are "sailing according to the chart."

The sentiment has been industriously promulgated, and has gained credence to a lamentable extent, that no person is competent to understand the inspired writings, unless he has a collegiate education: but who does not see—or rather, who might not see—that the prevalence of this sentiment, in conjunction with the prevailing apathy on the part of the masses, give to the eccleslastical leaders, a monopoly over the consciences of men; and that consequently, whatever sentiment or principle does not comport with the interest and popularity of these monopolists, becomes at once unpopular, whether of truth or error. Hence we find it to be the case, uniformly and unexceptionably, that wherever a man takes the Scriptures alone for his guide, discarding all traditionary and sectarian influence, and attempts the promulgation of the plain and simple principles of the gospel, he is as readily accused of heresy and fanaticism, as the most barefaced impostor of the basest character, who pretends to have received miraculous revelations in opposition to both Christianity and common sense. And this rank opposition of *popular* religion, against the *rational* religion of the gospel, is even now, carried to such an extent, that men are not unfrequently denounced as rank fanatics, merely on account of their being seen with the Bible in their pockets. We would admonish all to search the Scriptures; and to be cautious about condemning those who with sincerity are endeavoring to follow the true light of the Scripture revelation: for we esteem it to be more honorable, or less reprehensible, for a man to avow open infidelity, than to profess to advocate the Christian religion, while acting in direct opposition to the most ostensible, brilliant, and excellent principles thereof.

THINK ON ETERNITY.—I have frequently, after going from house to house where spiritual deadness seemed to reign, been cheered and exhilarated by a poor negro on the wayside. Think on eternity! said I to a poor black woman, the other day, just after I had visited the families in C., and was almost prostrated in body and mind. I could only say as I passed in sorrow, Think on eternity. She looked up; a gleam of intelligence and a smile of spiritual beauty illumined her dark features, as the poor African exclaimed, Yes, master, bless God I do. I caught the inspiration, and went on comforted and strengthened.—*L. H. Bate.*

INSCRIPTION ON A TOMBSTONE.

"I came in the morning—it was spring:
And I smiled;
I walked out at noon—it was summer:
And I was glad;
I sat me down at even—it was autumn:
And I was sad;
I laid me down at night—it was winter:
And I slept."

Meeting of Congress.

The first Session of the twenty-ninth Congress, commenced at Washington on Monday. Both Houses were fully organized. The Senate met at noon, when Vice-President Dallas took the Chair, and called the body to order. Forty-three members answered to their names.

The House of Representatives also met at 12 o'clock, and it was called to order by Mr. B. French, the Clerk, when 212 members answered to their names.

On motion of Mr. Hopkins, the House then proceeded to the election of a Speaker. And Mr. J. W. Davies of Indiana, was elected on the first ballot. The two houses adjourned at an early hour, after appointing the usual committees to wait on the President, &c. President Polk's message to the new Congress, reached this city at half-past nine on Tuesday evening.

A MOTHER'S DEVOTION.—While a canal boat was laying at one of the piers at Albany a few days since, a son of the Captain (Avory,) about two years and a half old, who was playing on deck accidently fell overboard between the boat and the dock, without being observed by the men at work; but the accident escaped not the ever-watchful eye of Mrs. Avory, who, with all a mother's impulsive affection, forgetting her own danger in that of her son, and without waiting for other aid, plunged instantly into the river, and gallantly rescued her drowning boy, whom she held with one hand, while clinging to the dock with the other, until drawn out of her perilous situation."

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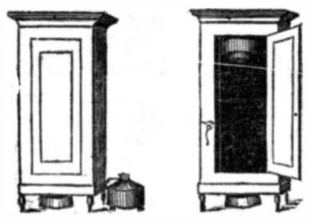
Locke's Portable Shower Bath.



THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the aid of servants, and without having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st. JOHN LOCKE.

Dec 4.

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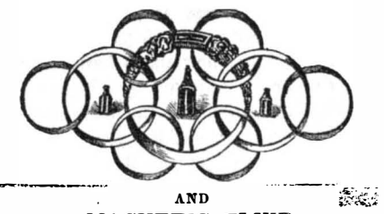

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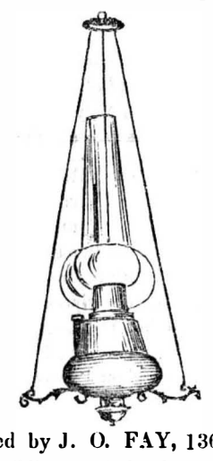

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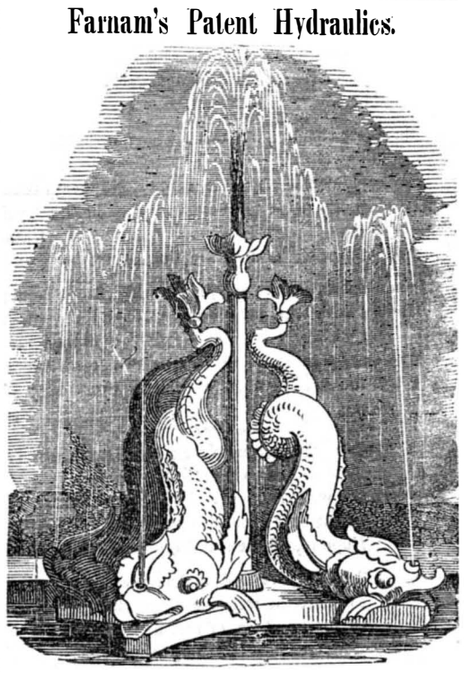

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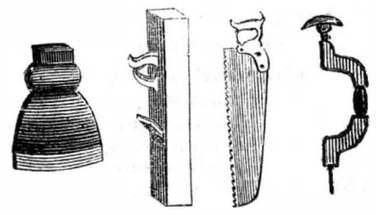

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